SUZUKI

DR-Z400SM

SUPPLEMENTARY SERVICE MANUAL

SAMPLE

USE THIS MANUAL WITH:
DR-Z400S SERVICE MANUAL (99500-43034-01E)

99501-43110-01E

DR-Z400SMK5 ('05-MODEL)

FOREWORD

This manual describes service data, service specifications and servicing procedures which differ from those of the DR-Z400SK5 ('05-model).

NOTE:
** Any differences between the DR-Z400SK5 ('05-model) and DR-Z400SMK5 ('05-model) in specifications and service data are indicated with an asterisk mark (*).*
** Please refer to the Service Manual for details which are not given in this manual.*

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SAMPLE

COUNTRY AND AREA CODES

The following codes stand for the applicable country(-ies) and area(-s).

CODE	COUNTRY or AREA	EFFECTIVE FRAME NO.
E-02	U.K.	JS1B8111100100001 –
E-19	E.U.	JS1B8111200100001 –
E-03	U.S.A. (Except for california)	JS1SK44A 52100001 –
E-28	Canada	JS1SK44A 52100001 –
E-33	California (U.S.A.)	JS1SK44A 52100001 –
UE-19	E.U.	JS1B8211100100001 –

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SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length	*	2 225 mm (87.6 in)	
Overall width	*	870 mm (34.3 in)	
Overall height	*	1 185 mm (46.7 in)	
Wheelbase	*	1 460 mm (57.5 in)	
Ground clearance	*	260 mm (10.2 in)	
Seat height	*	890 mm (35.0 in)	
Dry mass	*	134 kg (295 lbs)	E-03, 28, 33
	*	135 kg (297 lbs)	Others

ENGINE

Type	Four-stroke, liquid-cooled, DOHC
Number of cylinders	1
Bore	90.0 mm (3.543 in)
Stroke	62.6 mm (2.465 in)
Displacement	398 cm^3 (24.3 cu. in)
Compression ratio	11.3 : 1
Carburetor.	MIKUNI BSR36, single
Air cleaner	Polyurethane foam element
Starter system	Electric
Lubrication system	Dry sump
Idle speed	1 500 ± 100 r/min

DRIVE TRAIN

Clutch		Wet multi-plate type
Transmission		5-speed constant mesh
Gearshift pattern		1-down, 4-up
Primary reduction ratio		2.960 (74/25)
Gear ratios, Low		2.285 (32/14)
2nd		1.733 (26/15)
3rd		1.375 (22/16)
4th		1.090 (24/22)
Top		0.863 (19/22)
Final reduction ratio	*	2.733 (41/15)
Drive chain	*	RK520KZO, 110 links

CHASSIS

Front suspension	*	Inverted telescopic, coil spring, oil damped
Rear suspension		Link type, coil spring, oil damped
Front suspension stroke	*	260 mm (10.2 in)
Rear wheel travel.	*	276 mm (10.9 in)
Caster	*	26° 15'
Trail	*	94 mm (3.70 in)
Steering angle	*	38° (right & left)
Turning radius	*	2.6 m (8.5 ft)
Front brake		Disc brake
Rear brake		Disc brake
Front tire size	*	120/70R17M/C 58H, tube type
Rear tire size	*	140/70R17M/C 66H, tube type

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing.	7° B.T.D.C. at 1 500 r/min
Spark plug	NGK CR8E or DENSO U24ESR-N
Generator	Three-phase A.C. generator
Fuse	20 A
Battery	12 V 21.6 kC (6 Ah) /10 HR
Headlight	12 V 60/55 W
Turn signal light	12 V 21 W × 4
Brake light/Taillight	12 V 21/5 W
Speedometer light	LED
Neutral indicator light	LED
High beam indicator light	LED
Turn signal indicator light	LED
Water temperature warning light	LED

CAPACITIES

Fuel tank, including reserve	9.5 L (2.5/2.1 US/Imp gal)	E-33
	10.0 L (2.6/2.2 US/Imp gal)	Others
reserve	2.3 L (0.6/0.5 US/Imp gal)	
Engine oil, oil change	1 700 ml (1.8/1.5 US/Imp qt)	
with filter change	1 800 ml (1.9/1.6 US/Imp qt)	
overhaul.	1 900 ml (2.0/1.7 US/Imp qt)	
Coolant	1.3 L (1.4/1.1 US/Imp qt)	

These specifications are subject to change without notice.

SAMPLE

SERVICE DATA

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	36 (1.42)	—
	EX.	29 (1.14)	—
Tappet clearance (when cold)	IN.	0.10 – 0.20 (0.0039 – 0.0079)	—
	EX.	0.20 – 0.30 (0.0079 – 0.0118)	—
Valve guide to valve stem clearance	IN.	0.010 – 0.037 (0.0004 – 0.0015)	—
	EX.	0.030 – 0.057 (0.0012 – 0.0022)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000 – 5.012 (0.1969 – 0.1973)	—
Valve stem O.D.	IN.	4.975 – 4.990 (0.1959 – 0.1965)	—
	EX.	4.955 – 4.970 (0.1951 – 0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve seat width	IN. & EX.	0.9 – 1.1 (0.035 – 0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	32.6 (1.28)
	OUTER	—	36.3 (1.43)
Valve spring tension (IN. & EX.)	INNER	56 – 64 N (5.6 – 6.4 kgf, 12.3 – 14.1 lbs) at length 27.4 mm (1.08 in)	—
	OUTER	126 – 145 N (12.6 – 14.5 kgf, 27.7 – 32.0 lbs) at length 30.9 mm (1.22 in)	—

SAMPLE

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	36.490 – 36.540 (1.4366 – 1.4386)	36.190 (1.4248)
	EX.	35.790 – 35.840 (1.4091 – 1.4110)	35.490 (1.3972)
Camshaft journal oil clearance	IN. & EX.	0.019 – 0.053 (0.0007 – 0.0021)	0.150 (0.0059)
Camshaft journal holder I.D.	IN. & EX.	22.012 – 22.025 (0.8666 – 0.8671)	—
Camshaft journal O.D.	IN. & EX.	21.972 – 21.993 (0.8653 – 0.8659)	—
Camshaft runout	—		0.10 (0.004)
Cam chain pin (at arrow "3")	15th pin		—
Cylinder head distortion	—		0.05 (0.002)
Cylinder head cover distortion	—		0.05 (0.002)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Compression pressure (Automatic de-comp. actuated)	950 kPa (9.5 kgf/cm², 135 psi)			—
Piston to cylinder clearance	0.030 – 0.040 (0.0012 – 0.0016)			0.120 (0.0047)
Cylinder bore	90.000 – 90.015 (3.5433 – 3.5439)			Nicks or scratches
Piston diam.	89.965 – 89.980 (3.5419 – 3.5425) Measure at 15 mm (0.6 in) from the skirt end.			89.880 (3.5386)
Cylinder distortion	—			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 6.9 (0.27)	5.5 (0.22)
	2nd	R	Approx. 11.5 (0.45)	9.2 (0.36)
Piston ring end gap	1st		0.08 – 0.20 (0.003 – 0.008)	0.50 (0.020)
	2nd		0.08 – 0.20 (0.003 – 0.008)	0.50 (0.020)
Piston ring to groove clearance	1st		—	0.180 (0.007)
	2nd		—	0.150 (0.006)
Piston ring groove width	1st		0.78 – 0.80 (0.0307 – 0.0315)	—
			1.30 – 1.32 (0.0512 – 0.0520)	—
	2nd		0.81 – 0.83 (0.0319 – 0.0327)	—
	Oil		2.01 – 2.03 (0.0791 – 0.0799)	—

SAMPLE

ITEM	STANDARD		LIMIT
Piston ring thickness	1st	0.71 – 0.76 (0.0280 – 0.0299)	—
		1.08 – 1.10 (0.0425 – 0.0433)	—
	2nd	0.77 – 0.79 (0.0303 – 0.0311)	—
Piston pin bore	20.002 – 20.008 (0.7875 – 0.7877)		20.030 (0.7886)
Piston pin O.D.	19.995 – 20.000 (0.7872 – 0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	20.010 – 20.018 (0.7878 – 0.7881)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.30 – 0.65 (0.012 – 0.026)	1.0 (0.04)
Conrod big end width	21.95 – 22.00 (0.864 – 0.866)	—
Crank web to web width	62.0 ± 0.1 (2.441 ± 0.004)	—
Crankshaft runout	—	0.08 (0.003)

SAMPLE

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	2.220 (74/25 × 20/16 × 12/20)	—
Oil pressure (at 60 °C, 140 °F)	Above 40 kPa (0.4 kgf/cm^2, 5.7 psi) Below 140 kPa (1.4 kgf/cm^2, 19.9 psi) at 3 000 r/min	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	10 – 15 (0.4 – 0.6)	—
Drive plate thickness (No. 1 & No. 2)	2.92 – 3.08 (0.115 – 0.121)	2.62 (0.103)
Drive plate claw width (No. 1 & No. 2)	13.7 – 13.8 (0.539 – 0.543)	13.2 (0.520)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	49.9 (1.96)

TRANSMISSTION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		2.960 (74/25)		—
Final reduction ratio		* 2.733 (41/15)		—
Gear ratios	Low	2.285 (32/14)		—
	2nd	1.733 (26/15)		—
	3rd	1.375 (22/16)		—
	4th	1.090 (24/22)		—
	Top	0.863 (19/22)		—
Shift fork to groove clearance		0.1 – 0.3 (0.004 – 0.012)		0.5 (0.020)
Shift fork groove width		No. 1, No. 2 & No. 3	4.8 – 4.9 (0.189 – 0.193)	—
Shift fork thickness		No. 1, No. 2 & No. 3	4.6 – 4.7 (0.181 – 0.185)	—
Drive chain		Type	RK520KZO	—
		Links	* 110	—
		20-pitch length	—	319.4 (12.57)
Drive chain slack		40 – 50 (1.6 – 2.0)		—

CARBURETOR

ITEM		SPECIFICATION		
		E-02, 19	E-03, 28	E-33
Carburetor type		MIKUNI BSR36	←	←
Bore size		36 mm (1.4 in)	←	←
I.D. No.		29FA	29FB	29FC
Idle r/min		1 500 ± 100 r/min	←	←
Float height		130 ± 1.0 mm (0.51 ± 0.04 in)	←	←
Main jet	(M.J.)	#142.5	# 142.5	←
Jet needle	(J.N.)	5DH36-2nd	5DH37	←
Needle jet	(N.J.)	P-0M	P-0M	←
Pilot jet	(P.J.)	#22.5	# 22.5	←
Pilot air jet	(P.A.J.)	#165	#135	←
Pilot screw	(P.S.)	3 turns back	PRE-SET	←
Throttle cable play (pulling cable)		2 – 4 mm (0.08 – 0.16 in)	←	←

SAMPLE

THERMOSTAT + RADIATOR + FAN + ENGINE COOLANT

ITEM	STANDARD/SPECIFICATION		LIMIT
Thermostat valve opening temperature	Approx. 75 °C (167 °F)		—
Thermostat valve lift	Over 6 mm (0.24 in) at 90 °C (194 °F)		—
Engine coolant temp. switch operating temperature	OFF→ON	Approx. 117 °C (243 °F)	—
	ON→OFF	Approx. 100 °C (212 °F)	—
Radiator cap valve opening pressure	95 – 125 kPa (0.95 – 1.25 kgf/cm², 13.5 – 17.8 psi)		—
Cooling fan thermo-switch operating temperature	OFF→ON	Approx. 96 °C (205 °F)	—
	ON→OFF	Approx. 91 °C (196 °F)	—
Engine coolant type	Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50:50.		—
Engine coolant capacity	1 250 ml (1.3/1.1 US/Imp qt)		—

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD/SPECIFICATION		LIMIT
Brake lever play	0.1 – 0.3 (0.004 – 0.010)		—
Rear brake pedal height	5 (0.2)		—
Brake disc thickness	Front	* 4.0 ± 0.2 (0.16 ± 0.008)	3.5 (0.138)
	Rear	4.5 ± 0.2 (0.177 ± 0.008)	4.0 (0.16)
Brake disc runout	—		0.30 (0.012)
Master cylinder bore	Front	12.700 – 12.743 (0.5000 – 0.5017)	—
	Rear	12.700 – 12.743 (0.5000 – 0.5017)	—
Master cylinder piston diam.	Front	12.657 – 12.684 (0.4983 – 0.4994)	—
	Rear	12.657 – 12.684 (0.4983 – 0.4994)	—
Brake caliper cylinder bore	Front	27.000 – 27.050 (1.0630 – 1.0650)	—
	Rear	27.000 – 27.050 (1.0630 – 1.0650)	—
Brake caliper piston diam.	Front	26.918 – 26.968 (1.0598 – 1.0617)	—
	Rear	26.900 – 26.950 (1.0591 – 1.0610)	—
Brake fluid type	DOT 4		—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)

SAMPLE

ITEM	STANDARD/SPECIFICATION		LIMIT
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Wheel rim size	* Front	17M/C × MT 3.50	—
	* Rear	17M/C × MT 4.50	—

TIRE

ITEM	STANDARD/SPECIFICATION		LIMIT
Cold inflation tire pressure (Solo riding)	* Front	175 kPa (1.75 kgf/cm², 25 psi)	—
	* Rear	200 kPa (2.00 kgf/cm², 29 psi)	—
Cold inflation tire pressure (Dual riding)	* Front	175 kPa (1.75 kgf/cm², 25 psi)	—
	* Rear	225 kPa (2.25 kgf/cm², 33 psi)	—
Tire size	* Front	120/70R17M/C 58H	—
	* Rear	140/70R17M/C 66H	—
Tire type	* Front	DUNLOP D208F SM	—
	* Rear	DUNLOP D208 SM	—
Tire tread depth	* Front	—	1.6 (0.06)
	* Rear	—	2.0 (0.08)

SAMPLE

SUSPENSION

Unit: mm (in)

ITEM	STANDARD/SPECIFICATION			LIMIT
Front fork stroke	* 260 (10.2)			—
Front fork inner tube O.D.				
Front fork spring free length	* 450 (17.7)			441 (17.3)
Front fork oil type	SUZUKI FORK OIL SS-05 or an equivalent fork oli			—
Front fork oil capacity (each leg)	* OUTER	350 ml (11.830/12.324 US/Imp oz)		—
	* INNER	182 ml (6.152/6.408 US/Imp oz)		—
Front fork damping force adjuster	* Rebound	17th clicks turn back		—
	Compression	13th clicks turn back		—
Rear shock absorber gas pressure	* 981 kPa (9.81 kgf/cm², 139 psi)			—
Rear shock absorber spring pre-set length	* 254 (10)			—
Rear shock absorber damping force adjuster	* Rebound	14th clicks turn back		—
	* Compression	High speed	1 and 1/8 turns out	—
		Low speed	10th clicks turn back	—
Rear wheel travel	* 276 (10.9)			—
Swingarm pivot shaft runout	—			0.3 (0.01)

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION		NOTE
Spark plug		Type	DENSO: U24ESR-N NGK: CR8E	
		Gap	0.7 – 0.8 (0.028 – 0.031)	
Spark performance		Over 8 mm (0.3 in) at 1 atm.		
Ignition coil resistance		Primary	0.1 – 1.0 Ω	Terminal – Ground
		Secondary	12 – 20 kΩ	Plug cap – Terminal
Ignition coil primary peak voltage		More than 150 V		⊕: B/W, ⊖: B/Y
Generator coil resistance		Charging	0.50 – 1.25 Ω	Y – Y
		Signal coil	0.05 – 0.20 Ω	B – W
		Pick-up coil	390 – 600 Ω	G – Bl
Pick-up coil peak voltage		More than 5.0 V		⊕: Bl, ⊖: G
Signal coil peak voltage		More than 1.4 V		⊕: B, ⊖: W
Generator no-load voltage (When engine is cold)		More than 75 V (AC) at 5 000 r/min		Y – Y
Regulated voltage		13.5 – 15.0 V at 5 000 r/min		
Generator Max. output		200 W at 5 000 r/min		
Starter relay resistance		3 – 5 Ω		
Battery	Type designation	YT7B-BS		
	Capacity	12 V 21.6 kC (6 Ah)/10 HR		
Fuse size		20 A		

WATTAGE

Unit: W

ITEM		SPECIFICATION	
		E-02, 19	E-03, 28, 33
Headlight	HI	60	←
	LO	55	←
Position light		4	
Brake light/Taillight		21/5	←
Turn signal light		21	←
Speedometer light		LED	←
Neutral indicator light		LED	←
Turn signal indicator light		LED	←
High beam indicator light		LED	←
Water temp. indicator light		LED	←

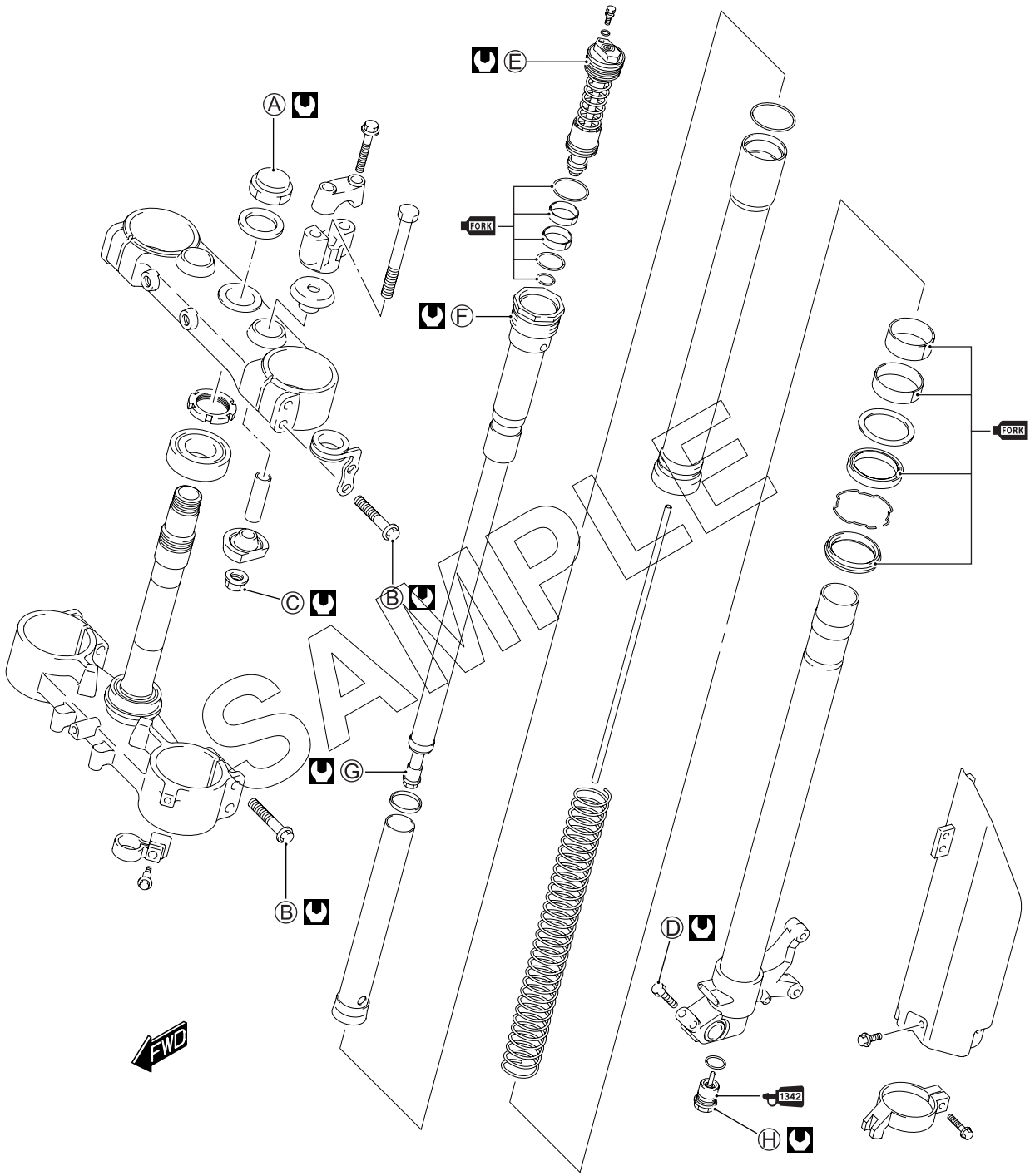
SAMPLE

FUEL + OIL

ITEM		SPECIFICATION		NOTE
Fuel type		Use only unleaded gasoline of at least 87 pump octane (R/2 + M/2) or 91 octane or higher rated by the research method. Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.		E-03, 28, 33
Fuel tank capacity	including reserve	9.5 L (2.5/2.1 US/Imp qt)		E-33
		10.0 L (2.6/2.2 US/Imp qt)		The others
	reserve	2.3 L (0.6/0.5 US/Imp qt)		
Engine oil type		* SAE 10W-40, API SF/SG or SH/SJ with JASO MA		
Engine oil capacity		Change	1 700 ml (1.8/1.5 US/Imp qt)	
		Filter change	1 800 ml (1.9/1.6 US/Imp qt)	
		Overhaul	1 900 ml (2.0/1.7 US/Imp qt)	

SAMPLE

FRONT FORK
CONSTRUCTION

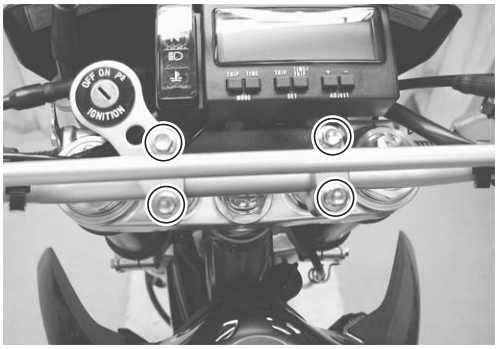


SAMPLE

ITEM	N·m	kgf-m	lb-ft	ITEM	N·m	kgf-m	lb-ft
Ⓐ	90	9.0	65.0	Ⓔ	30	3.0	21.5
Ⓑ	23	2.3	16.5	Ⓕ	35	3.5	25.5
Ⓒ	45	4.5	32.5	Ⓖ	23	2.3	16.5
Ⓓ	18	1.8	13.0	Ⓗ	70	7.0	50.5

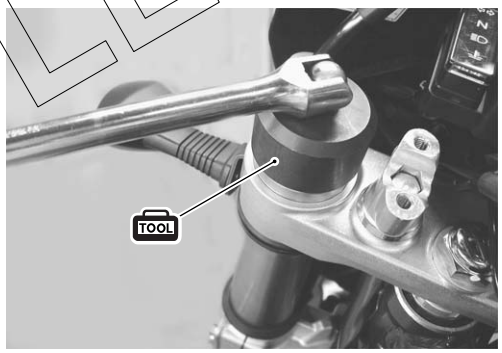
REMOVAL

- Place a block under the chassis tubes.
- Remove the fork protectors, brake hose guide and brake hose clamp.
- Remove the front brake caliper.
- Remove the front wheel.
- Remove the handlebars.



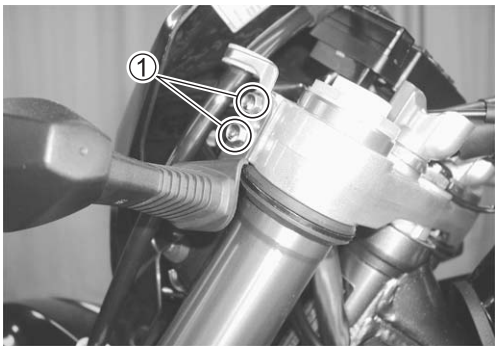
- Loosen the front fork cap bolt 1 – 2 turns to facilitate later disassembly.

09941-53630: Front fork top cap wrench



SAMPLE

- Loosen the front fork upper clamp bolts ①.



- Hold the fork body and loosen the fork lower clamp bolts ②.
- Remove the front fork.

DISASSEMBLY

- Set rebound and compression damper settings to the minimum settings (softest) before disassembling. Record the setting before turning the adjuster.
- Thoroughly clean the fork before disassembly.

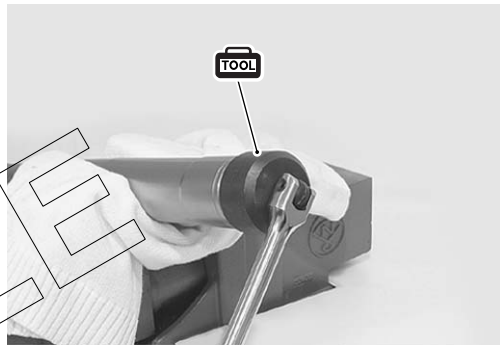
CAUTION

Scratches or other damage on the inner tube or on the oil seal lip will cause oil leak.

Avoid scratching or damaging the inner tube or the oil seal. Use a mild detergent or car wash soap and sponge out dirt with plenty of water.

- Clamp the outer tube with a vise. Protect the outer tube surface using a rag.
- Loosen and remove the fork cap bolt (sub-tank) from the outer tube and slowly slide down the outer tube.

TOOL 09941-53630: Front fork top cap wrench



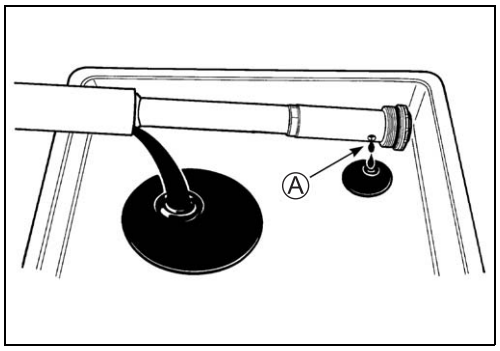
⚠ WARNING

Clamping the outer tube too tight can damage it which will affect riding stability.

Do not clamp the outer tube too tight.

- Place a drain pan under the front fork and drain fork oil.

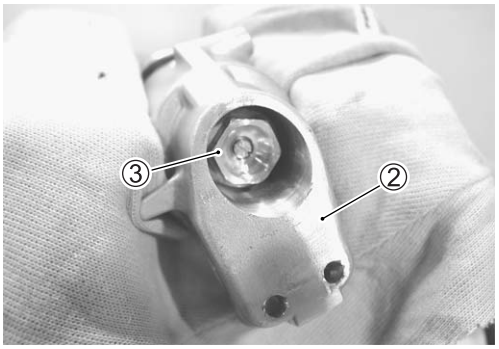
NOTE:
Face the oil hole Ⓐ on the sub-tank downward.



- Raise the outer tube and temporarily tighten the fork cap bolt ① (sub-tank) to the outer tube.

SAMPLE

- Clamp the axle holder ② with a vise. Protect the axle holder surface using a rag.
- Loosen the center bolt ③ completely with a 21 mm socket wrench.



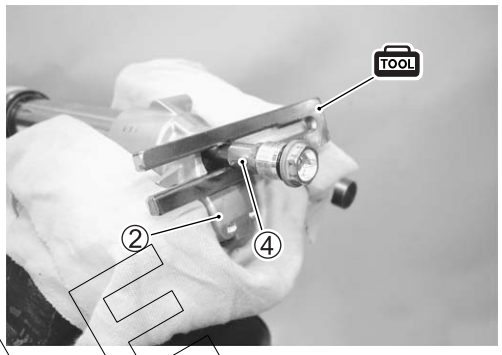
⚠ WARNING

Clamping the axle holder too tight can damage it which will affect riding stability.

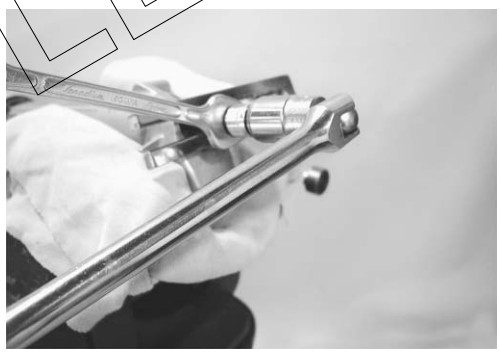
Do not clamp the axle holder too tight.

- Compress the outer tube by hands and install the conrod holder (special tool) between the axle holder bottom ② and locknut ④.

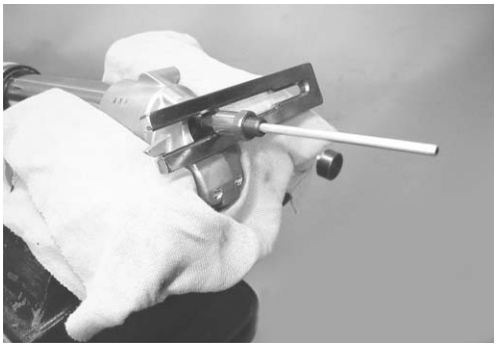
TOOL 09910-20115: Conrod holder



- Hold the locknut with a wrench and remove the center bolt.

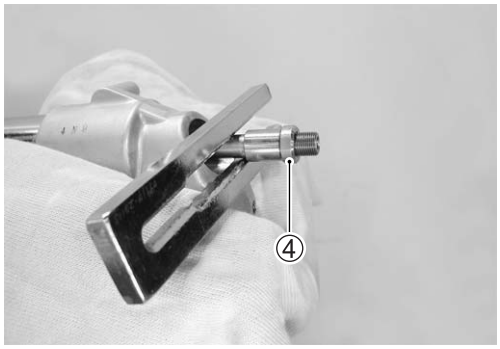


- Remove the push rod.



SAMPLE

- With the outer tube compressed by hands, remove the special tool.

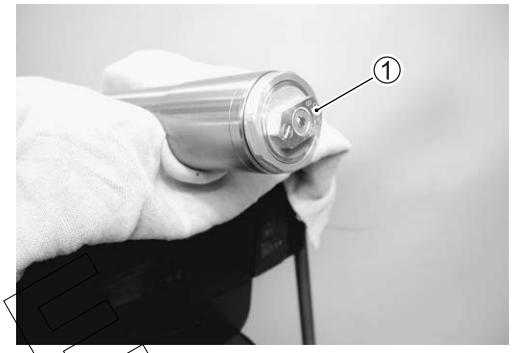


CAUTION

Removing the locknut ④ and pushing the inner rod thread into the damper rod will damage the inner rod oil seal.

Do not remove the locknut ④ from the inner rod.

- Loosen the fork cap bolt ① (sub-tank) and remove the sub-tank ⑤ along with the damper rod assembly ⑥.
- Remove the fork spring ⑦.

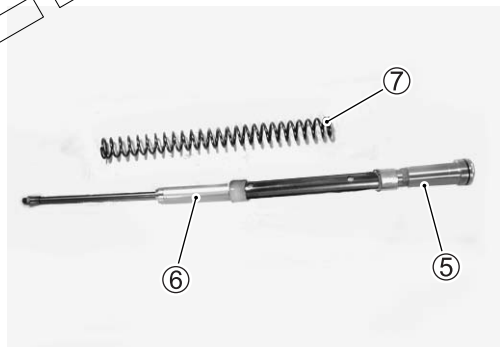


CAUTION

Disassembling the damper rod assembly can lead to trouble.

Do not disassemble the damper rod assembly.
Do not separate the sub-tank and damper rod assembly.

SAMPLE

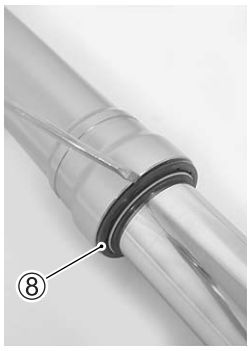


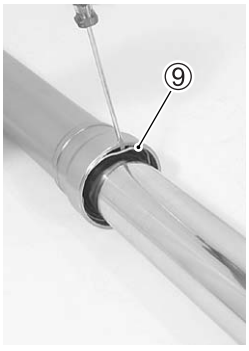
- Remove the dust seal ⑧ and the stopper ring ⑨.

CAUTION

Scratches on the inner tube could cause oil leaks.

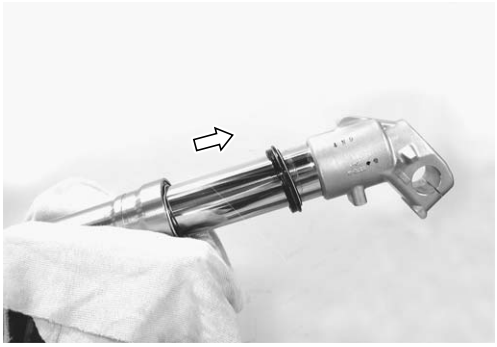
Avoid scratching when removing.



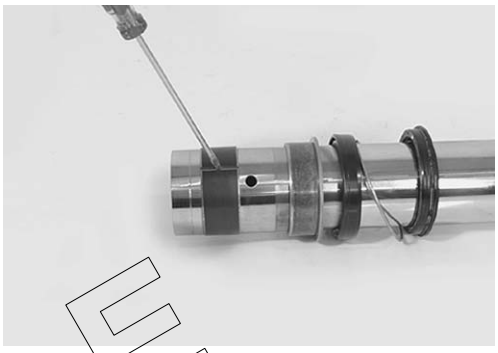


INNER TUBE

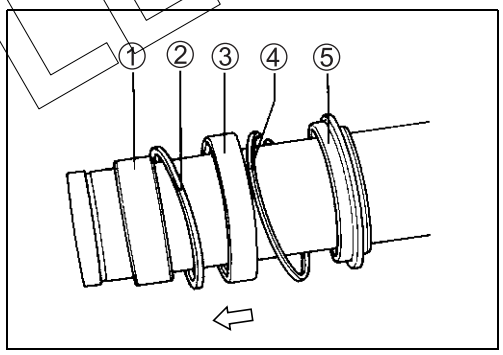
- Separate the inner tube out of the outer tube.



- Remove the slide bushing from the inner tube.



- Remove the following parts from the inner tube.
  Guide bushing ①
  Seal retainer ②
  Oil seal ③
  Stopper ring ④
  Dust seal ⑤

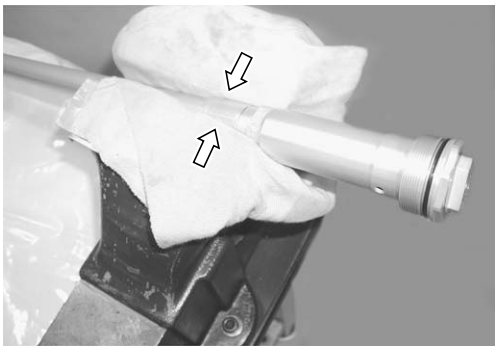


SAMPLE

- Clamp the bottom (flat part) of the sub-tank with a vise.

CAUTION

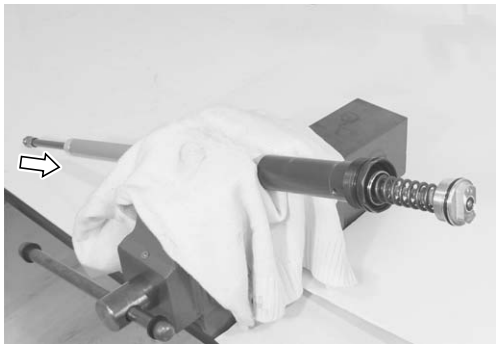
Do not clamp the sub-tank too tight.



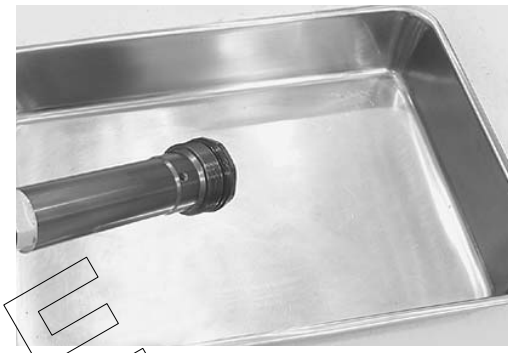
- Loosen the compression damper unit.

• Remove the compression damper unit from the sub-tank.

NOTE:
Slowly compress the inner rod until it stops so that the compression damper unit can be removed easily.



• Drain the fork oil from the damper rod assembly by moving the inner rod several strokes.



SAMPLE

INSPECTION

CENTER BOLT

• Inspect the adjuster rod of the center bolt for damage. If it is damaged, replace it with a new one.
• Replace the O-ring with a new one.

COMPRESSION DAMPER UNIT

• Inspect the compression damper unit for damage. If it is damaged, replace it with a new one.
• Replace the O-ring with a new one.

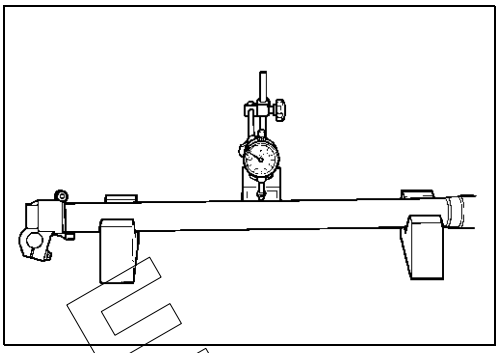
CAUTION

Disassembling the compression damper unit can lead to trouble.

Do not disassemble the compression damper unit.

INNER TUBE AND OUTER TUBE

- Inspect the inner tube for scratches. If it has scratches, replace it with a new one.
- Inspect the outer tube for dent. If it is dented all the way to the inner side, replace it with a new one.



- Measure the inner tube runout using the V-blocks and dial gauge.

DATA **Inner tube runout**
Service Limit: 0.4 mm (0.02 in)

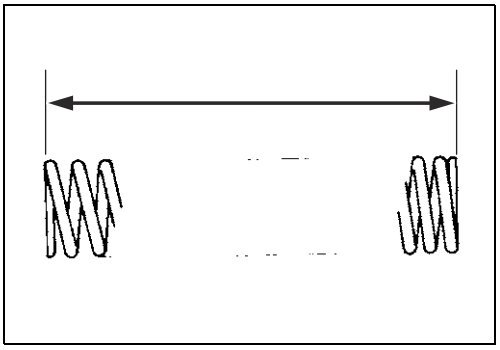
TOOL **09900-20607: Dial gauge (1/100 mm)**
09900-20701: Magnetic stand
09900-21304: V-block

DAMPER ROD

- Inspect the damper rod assembly for scratches or bending. If it has scratches or is bent, replace it with a new one.

SAMPLE

FORK SPRING



- Measure the free length of front fork spring.

DATA **Service Limit: 441 mm (17.36 in)**

SLIDE BUSHING AND GUIDE BUSHING

Inspect the "teflon coating metals" (slide bushing and guide bushing) for wear or damage. If they are worn or damaged, replace them with new ones.

Inspect the metal particles on the "teflon coating metals". If they are not clean, clean them with a nylon brush and fork oil.

REASSEMBLY

NOTE:

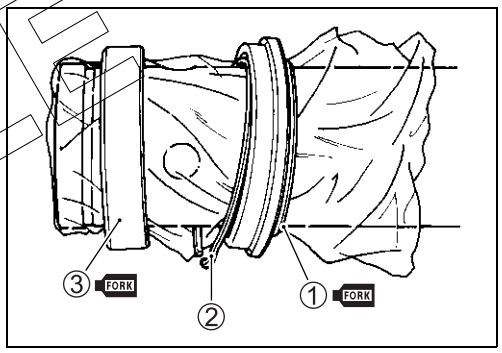
** Clean all fork parts before reassembling.*

** Replace the O-rings, oil seal and dust seal with the new ones.*

** Apply specified front fork oil when installing the O-rings, slide bushing, guide bushing, damper unit and other sliding parts.*

INNER TUBE

- Apply front fork oil to the oil seal lip and the dust seal.
- Cover the inner tube with a plastic film.
- Install the following parts to the inner tube:
  New dust seal ①
  Stopper ring ②
  New oil seal ③



CAUTION

Scratches on the oil seal lip can cause oil leaks.

When installing the seals, place a plastic film over the bushing attachment groove and edges of the inner tube to avoid damaging the seals' lip.

SAMPLE

NOTE:

The side of the oil seal that has a mark should face the dust seal.

- Remove the plastic film and install the seal retainer ④, guide bushing ⑤ and slide bushing ⑥.
- Clean the parts and keep them free from dust.

NOTE:

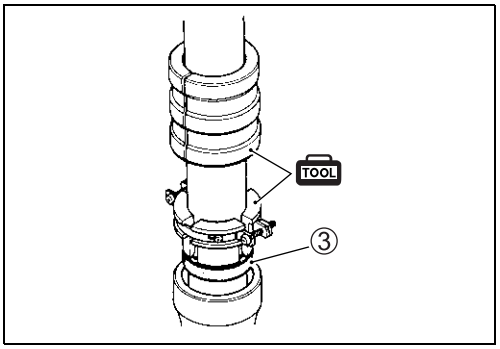
Inspect the bushings for burrs. If there is a burr, remove it with a knife, taking care not to peel off the teflon coating. If the bushings have a large crack or excessive play after installing them, replace them with new ones.

- Insert the inner tube into the outer tube.

- Install the new oil seal ③ with the special tool until the stopper ring groove of the outer tube can be seen.

TOOL 09940-52861: Front fork oil seal installer set

- Attach the stopper ring securely to the stopper ring groove of the outer tube.

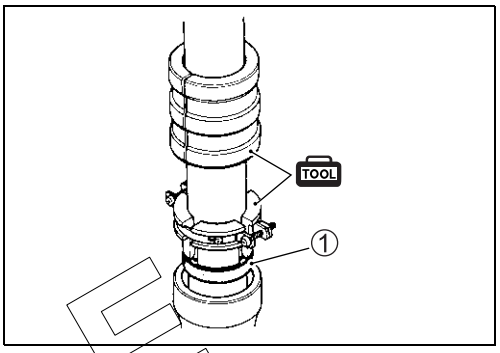


- Attach the dust seal ①.

NOTE:
After attaching the dust seal, make sure that there are no cracks around the circumference of the seal. Cracks could allow water, mud and the like to enter and cause an oil leak.

CAUTION

Use of grease as a substitute fork oil when installing the oil seal can result in an oil leak. Applying grease to the dust seal and oil seal can cause dirt to accumulate and damage the dust seal lip and oil seal lip.
Use only a thin coat of fork oil on the oil seal.



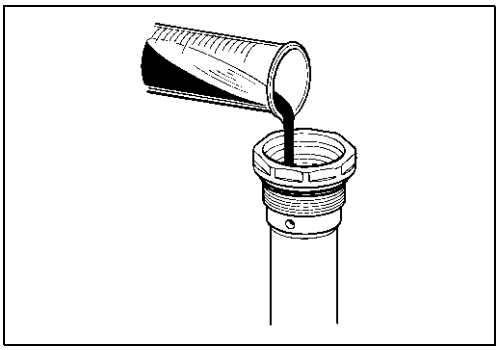
COMPRESSION DAMPER UNIT

- Clean each threaded part before installing.

- With the damper rod in fully extended position, pour the specified amount of fork oil.

DATA Fork oil quantity (Inside the damper rod):
182 ml (6.152/6.408 US/Imp oz)

FORK 99000-99001-SS5: SUZUKI FORK OIL SS-05



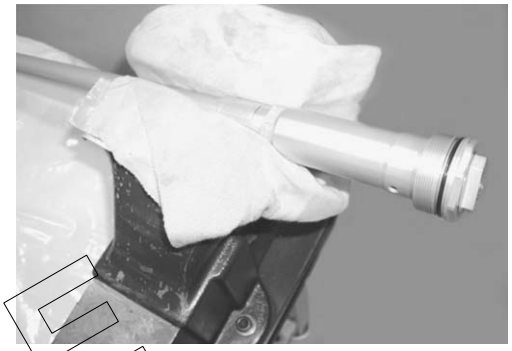
SAMPLE

- Apply fork oil to the O-rings and bushing on the compression damper unit.
- With the damper rod held immovable in fully extended position, gently install the compression damper unit to the sub-tank.

- Clamp the bottom (flat part) of the sub-tank with a vise.

CAUTION

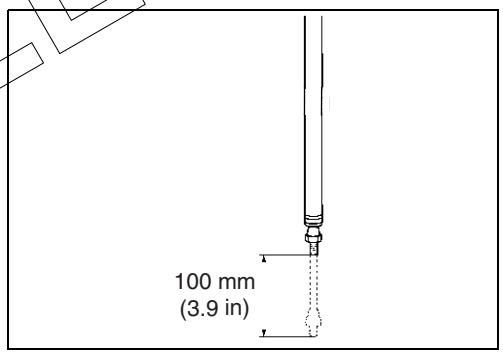
Do not clamp the sub-tank too tight.



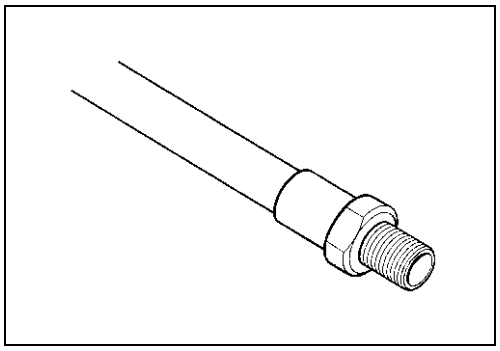
- Tighten the compression damper unit to the specified torque.

Compression damper unit: 30 N·m (3.0 kgf-m, 21.5 lb-ft)

- With the damper rod held in vertical position, slowly move the inner rod several strokes.



- Tighten the locknut by hand completely.

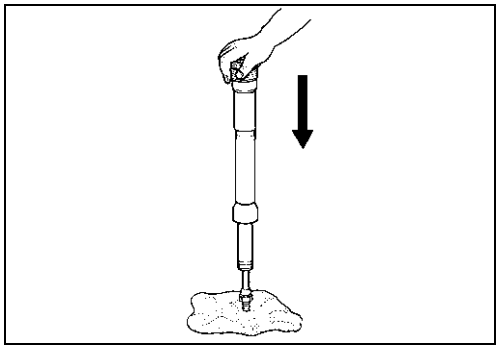


- With the damper rod held in vertical position, compress the damper rod fully to discharge an excess of oil.

CAUTION

Protect the inner rod end with a rag when compressing the damper rod.

NOTE:
Set the compression damper setting to the softest.

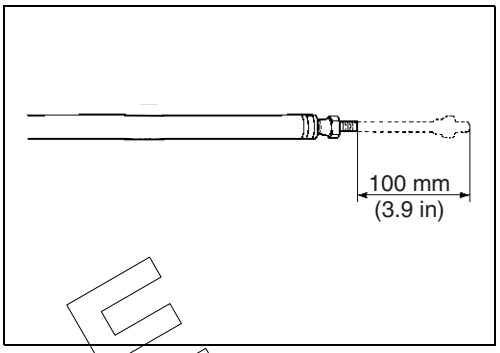


SAMPLE

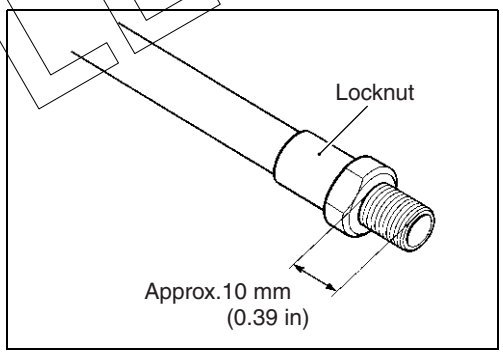
- Force out the remaining oil (discharged oil) using compressed air completely.

- With the damper rod in horizontal position, move the inner rod by hand to inspect it if operating smoothly.

If the inner rod is not extend, repeat the "COMPRESSION DAMPER UNIT" procedures (Pour the specified amount fork oil and discharge an excess of oil). (☞21)



- Make sure approx. 10 mm (0.39 in) of inner rod thread is exposed on the end.

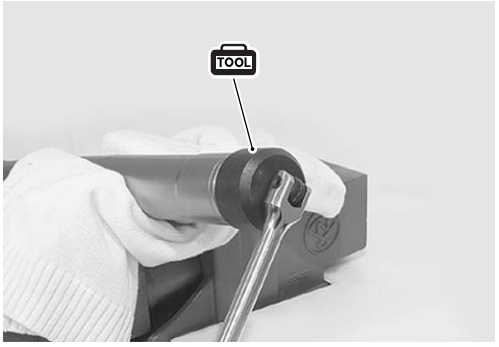


SAMPLE

- Completely wipe off the fork oil from the spring and damper rod assembly.
- Insert the spring and damper rod assembly into the fork.

- Temporarily tighten the fork cap bolt (sub-tank).

09941-53630: Front fork top cap wrench



- Clamp the axle holder with a vise. Protect the axle holder with a rag when using a vise.

⚠ WARNING

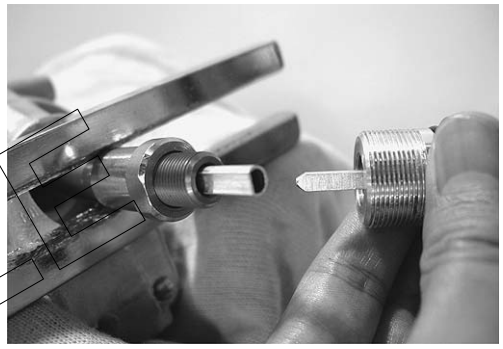
Clamping the axle holder too tight can damage it which will affect riding stability.

Do not clamp the axle holder too tight.

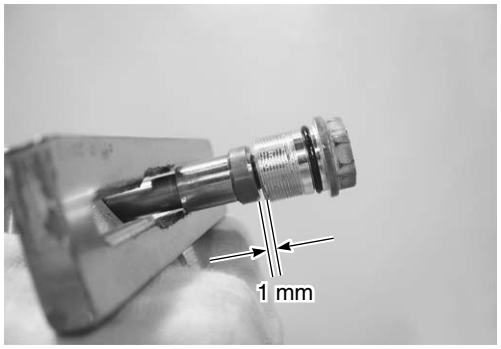
- Compress the outer tube by hands and install the conrod holder (special tool) between the axle holder bottom and locknut.

TOOL 09910-20116: Conrod holder

- Insert the push rod into the inner rod.
- Insert the ◠ shaped projection of center bolt into the push rod.



- Slowly turn the center bolt clockwise until resistance is felt and check the clearance between the locknut and center bolt to provide more than 1 mm (0.04 in).



- Turn the locknut counterclockwise until it contacts with the center bolt.
- With the locknut held immovable using a wrench, tighten the locknut/center bolt to the specified torque.

Locknut/center bolt: 23 N·m (2.3 kgf-m, 16.0 lb-ft)

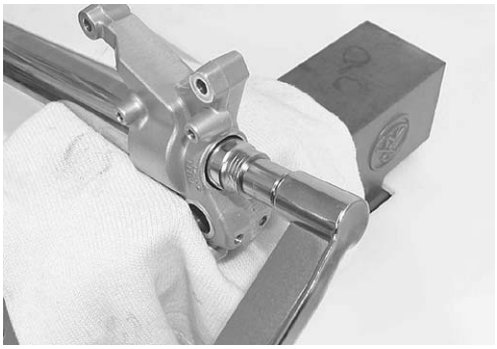
- With the outer tube compressed by hands, remove the special tool.

SAMPLE

- Apply THREAD LOCK "1342" to the center bolt.
- Tighten the center bolt to the specified torque.

Center bolt: 70 N·m (7.0 kgf-m, 51.0 lb-ft)

99000-32050: THREAD LOCK "1342"



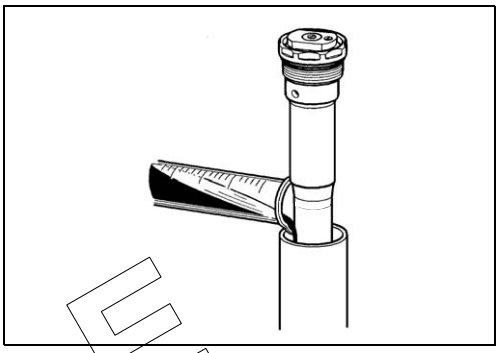
- Loosen and remove the fork cap bolt (sub-tank) from the outer tube and slowly slide down the outer tube.

09941-53630: Front fork top cap wrench

- Pour the specified amount of fork oil into the outer tube.

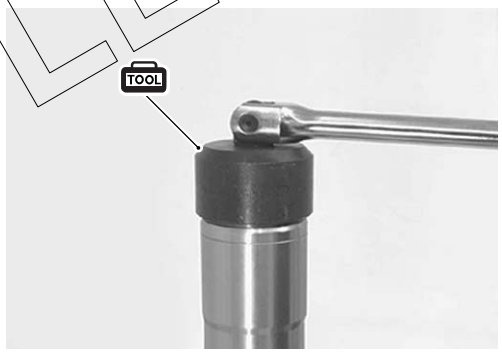
Oil quantity: 350 ml (11.83/12.32 US/Imp oz)

99000-99001-SS5: SUZUKI FORK OIL SS-05



- Raise the outer tube and temporarily tighten the fork cap bolt (sub-tank).

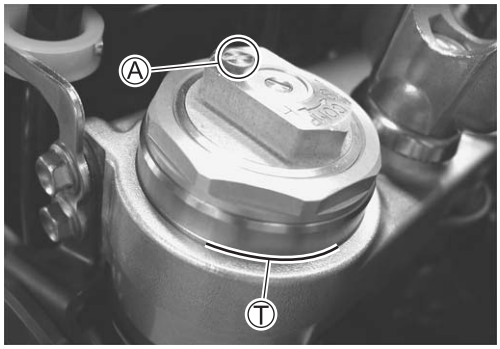
09941-53630: Front fork top cap wrench



SAMPLE

INSTALLATION

- Install the front fork with the line Ⓣ aligned with the upper surface of the upper bracket.
- Check that the air valve Ⓐ is positioned at the front.



- Tighten the fork lower clamp bolts to the specified torque.

Fork lower clamp bolt: 23 N·m (2.3 kgf-m, 16.5 lb-ft)

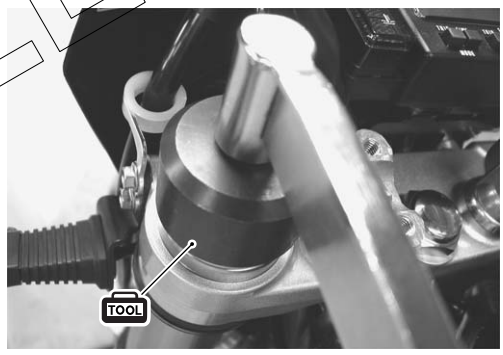
- Tighten the fork upper clamp bolts to the specified torque.

Fork upper clamp bolt: 23 N·m (2.3 kgf-m, 16.5 lb-ft)

- Tighten the fork cap bolt (sub-tank) to the specified torque.

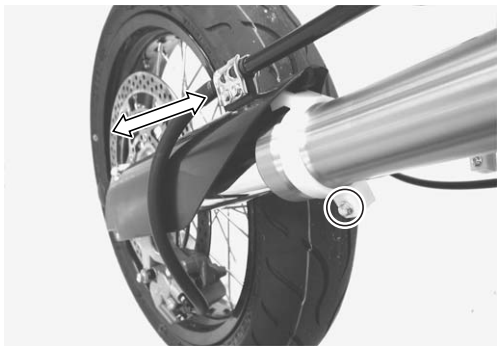
09941-53630 : Front fork top cap wrench

Fork cap bolt: 35 N·m (3.5 kgf-m, 25.5 lb-ft)



- Install the handlebars. (☞DR-Z400SY 6-22)
- Install the front wheel. (☞28)
- Install the brake caliper. (☞DR-Z400SY 6-45)

- Check that the front fork protectors move smoothly. If not, loosen and adjust the protector guide.



SAMPLE

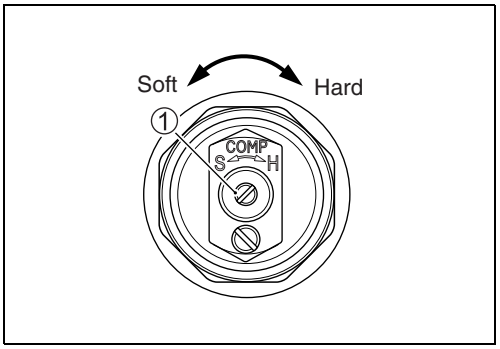
INSPECTION AFTER INSTALLATION

- Front fork (☞DR-Z400SY 2-23)
- Steering (☞DR-Z400SY 2-23)
- Front brake hose routing (☞30)

COMPRESSION DAMPING FORCE ADJUSTMENT

- Turn the adjuster screw clockwise until it stops (full hard position).
- Turn the adjuster screw counterclockwise. 13th position is the standard position.

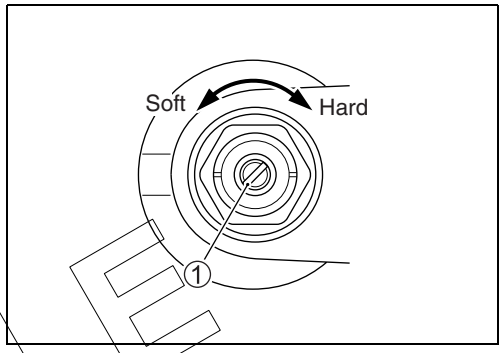
DATA Compression damping force adjuster
Standard setting: 13 clicks turn back



REBOUND DAMPING FORCE ADJUSTMENT

- Turn the adjuster screw clockwise until it stops (full hard position).
- Turn the adjuster screw counterclockwise. 17th position is the standard position.

DATA Rebound damping force adjuster
Standard setting: 17 clicks turn back



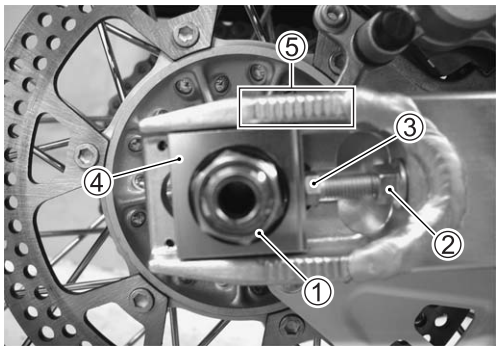
DRIVE CHAIN ADJUSTMENT

- Remove the cotter pin. (For E-03, 28, 33)
- Loosen the axel nut ①.
- Loosen the locknuts ② and adjust the drive chain slack to the specification by turning the adjusters ③. Make sure that the right and left adjuster plates ④ are at the same position on scales ⑤.
- With the adjusters ③ held in position, tighten the locknuts ②.
- Push the adjuster plates ④ to the adjusters ③ and tighten the axel nut ①.

Axel nut: 100 N·m (10.0 kgf-m, 72.5 lb-ft) For E-03, 28, 33
110 N·m (11.0 kgf-m, 79.5 lb-ft)
For the other countries

- Tighten the locknut ②.

NOTE:
After installing the rear axel nut, insert a new cotter pin into the rear axel. (For E-03, 28, 33)



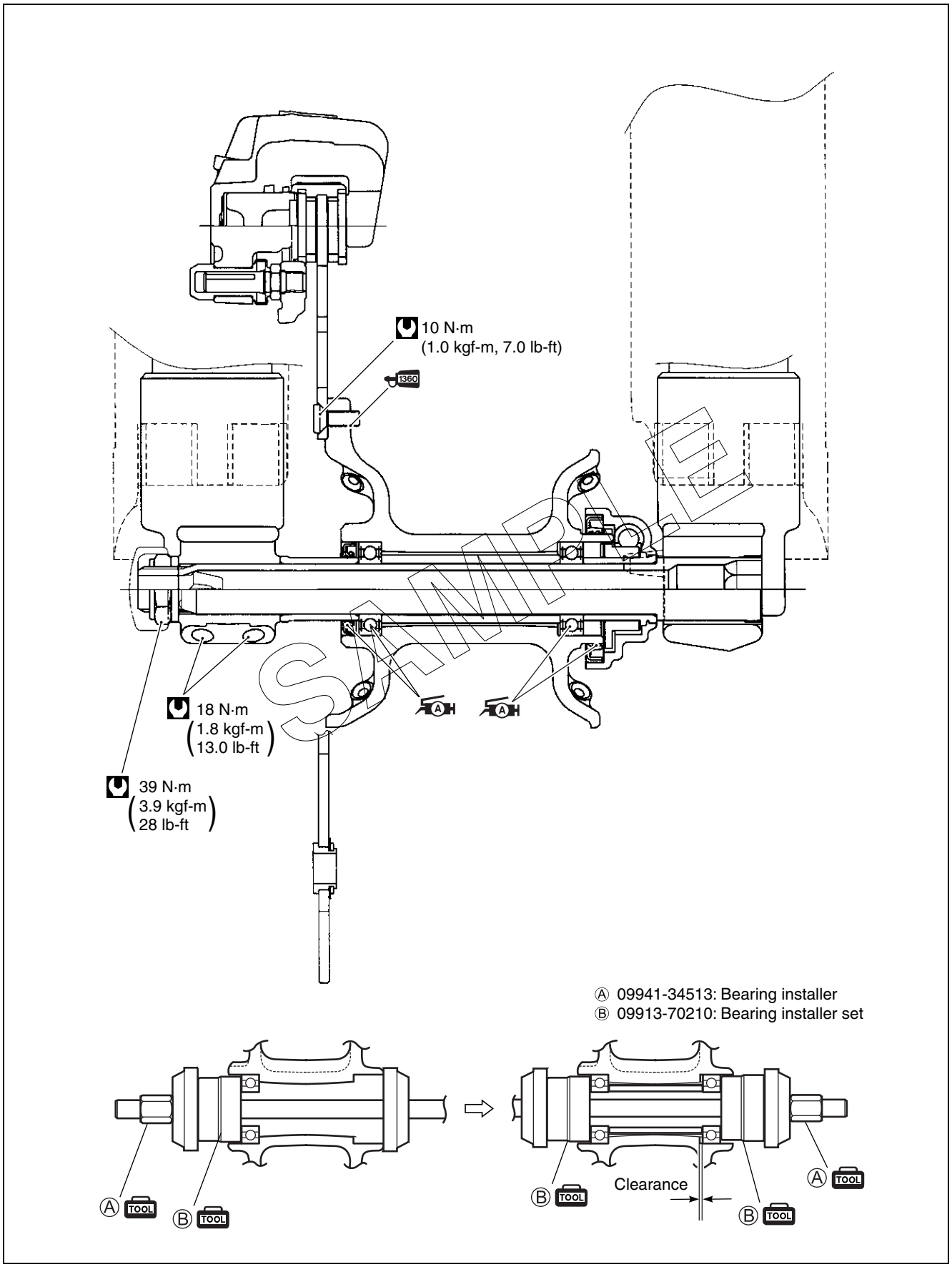
SAMPLE

TIGHTENING TORQUE
CHASSIS

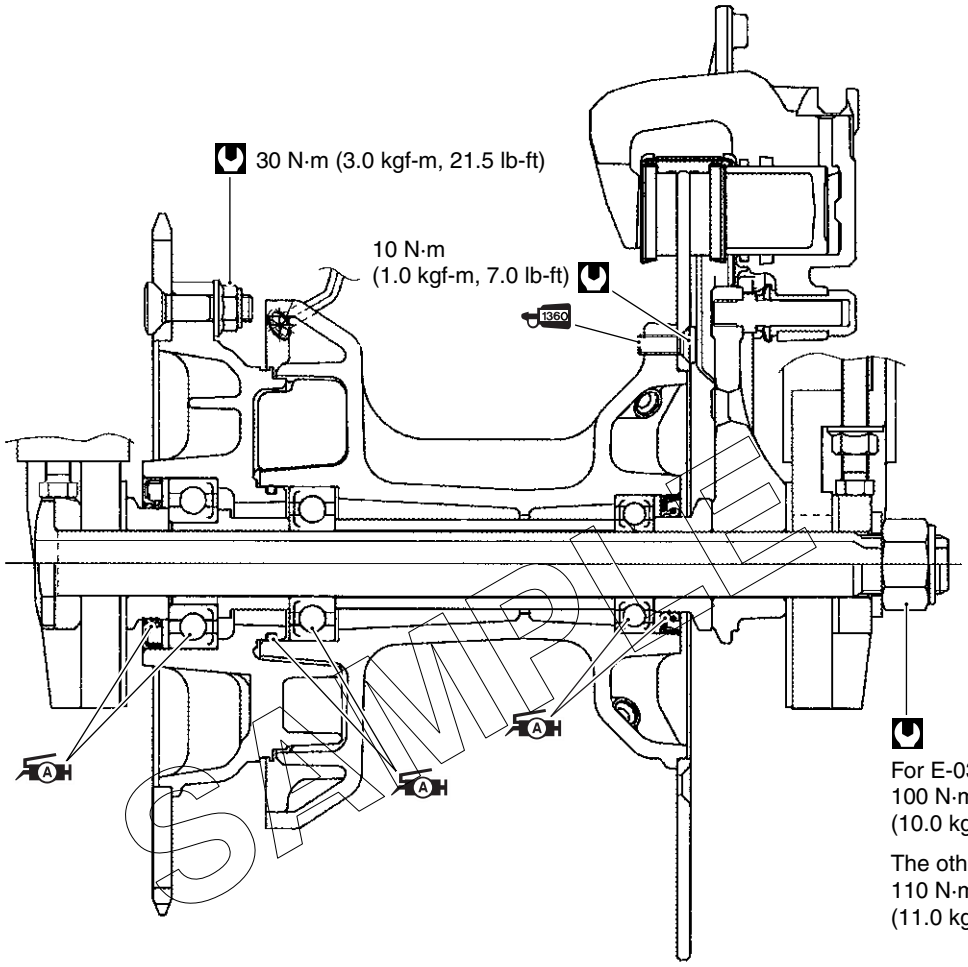
ITEM	N·m	kgf-m	lb-ft
Handlebar clamp bolt	23	2.3	16.5
Front fork upper clamp bolt	* 23	* 2.3	* 16.5
Front fork lower clamp bolt	* 23	* 2.3	* 16.5
Steering stem head nut	90	9.0	65.0
Front fork cap bolt	* 35	* 3.5	* 25.5
Front fork center bolt	* 70	* 7.0	* 50.5
Compression damper unit	* 30	* 3.0	* 21.5
Front brake master cylinder mounting bolt	10	1.0	7.0
Rear brake master cylinder mounting bolt	10	1.0	7.0
Brake hose union bolt (front & rear)	23	2.3	16.5
Front brake caliper mounting bolt	26	2.6	19.0
Brake pad mounting pin (front & rear)	18	1.8	13.0
Brake caliper plug (front & rear)	2.5	0.25	1.8
Brake air bleeder valve (front & rear)	* 6	* 0.6	* 4.3
Rear brake rod locknut	18	1.8	13.0
Rear brake pedal bolt	29	2.9	21.0
Brake disc mounting bolt (front & rear)	10	1.0	7.0
Front axle nut	* 39	* 3.9	* 28.0
Front axle pinch bolt	18	1.8	13.0
Seat rail mounting nut (upper)	35	3.5	25.5
Seat rail mounting bolt (lower)	35	3.5	25.5
Rear axle nut E-03, 28, 33	100	10.0	72.5
Rear axle nut The other countries	110	11.0	79.5
Rear sprocket nut	30	3.0	21.5
Drive chain roller mounting bolt (upper & lower)	40	4.0	29.0
Spoke nipple (front & rear)	3	0.3	2.0
Swingarm pivot nut	77	7.7	55.5
Rear shock absorber spring adjuster lock ring	* 44	* 4.4	* 32.0
Rear shock absorber mounting nut (upper & lower)	60	6.0	43.5
Cushion lever mounting nut (center)	100	10.0	72.5
Cushion lever mounting nut (front)	100	10.0	72.5
Cushion rod mounting nut	100	10.0	72.5
Side stand bolt	50	5.0	36.0
Side stand nut	55	5.5	40.0

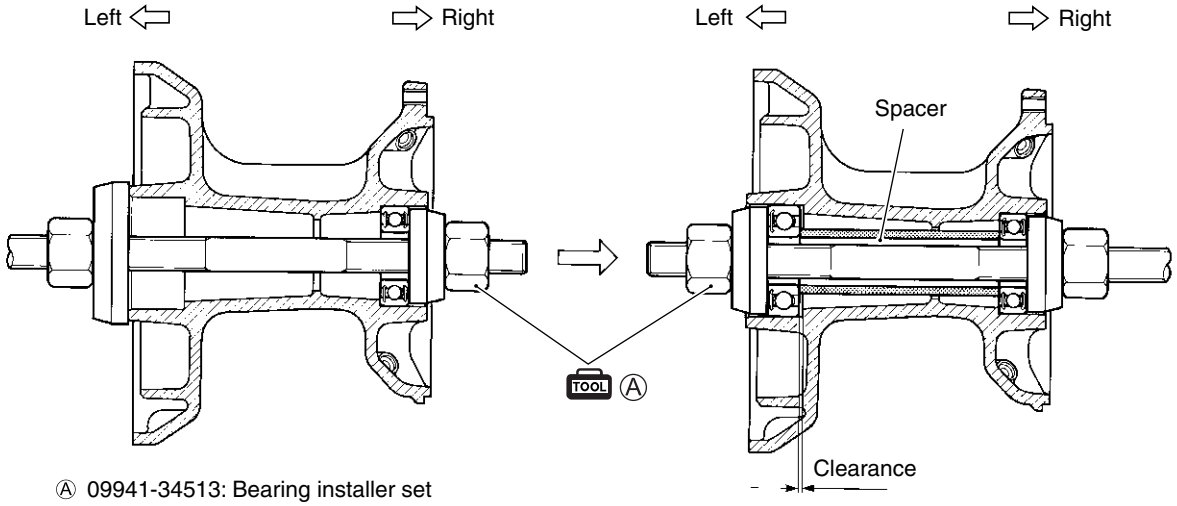
SAMPLE

FRONT AXLE


10 N·m
(1.0 kgf-m, 7.0 lb-ft)
1360
18 N·m
(1.8 kgf-m
13.0 lb-ft)
39 N·m
(3.9 kgf-m
28 lb-ft)
Ⓐ 09941-34513: Bearing installer
Ⓑ 09913-70210: Bearing installer set
Ⓐ TOOL
Ⓑ TOOL
Clearance
Ⓑ TOOL
Ⓐ TOOL
Ⓑ TOOL

REAR AXLE

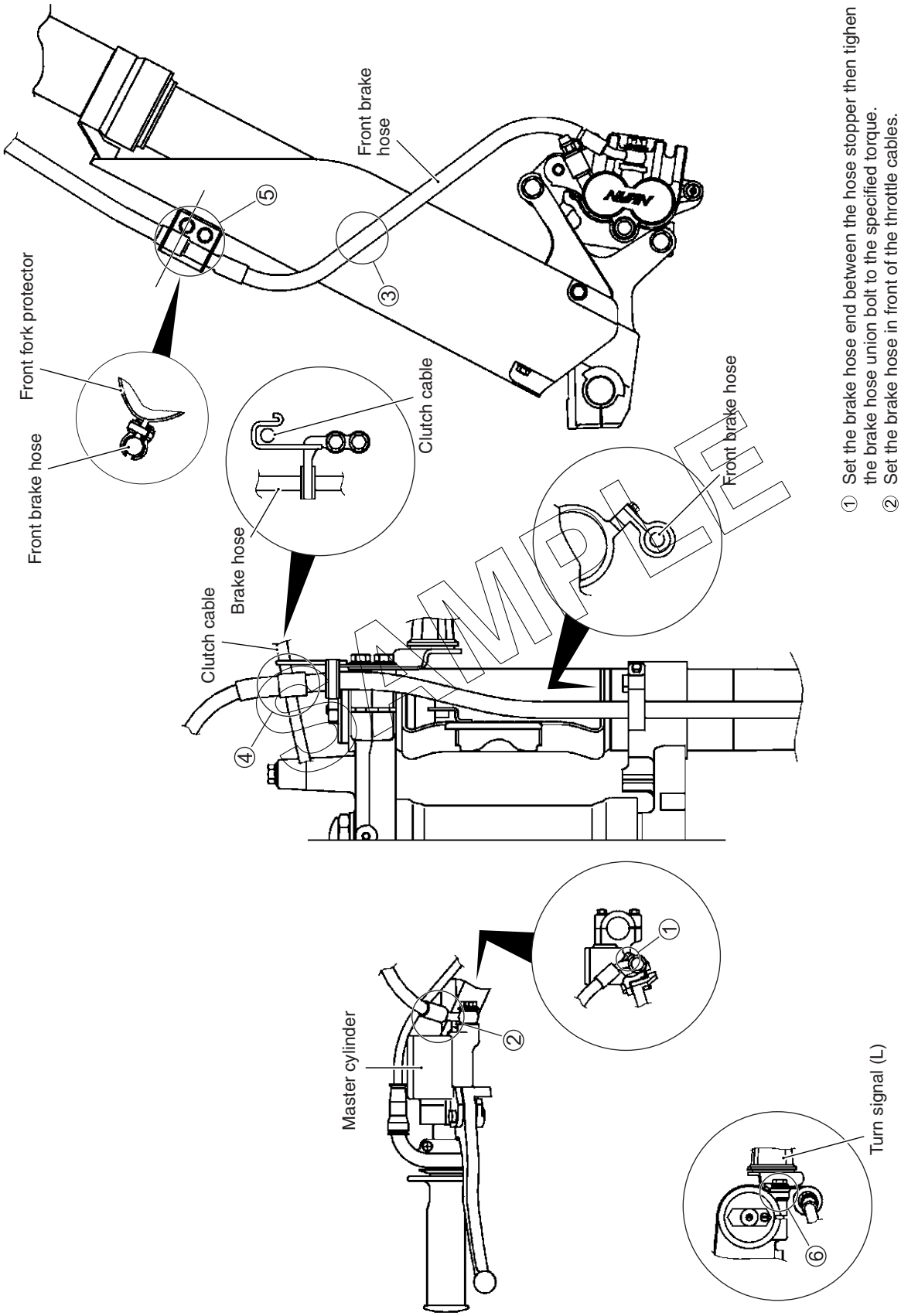




Ⓐ 09941-34513: Bearing installer set

SAMPLE

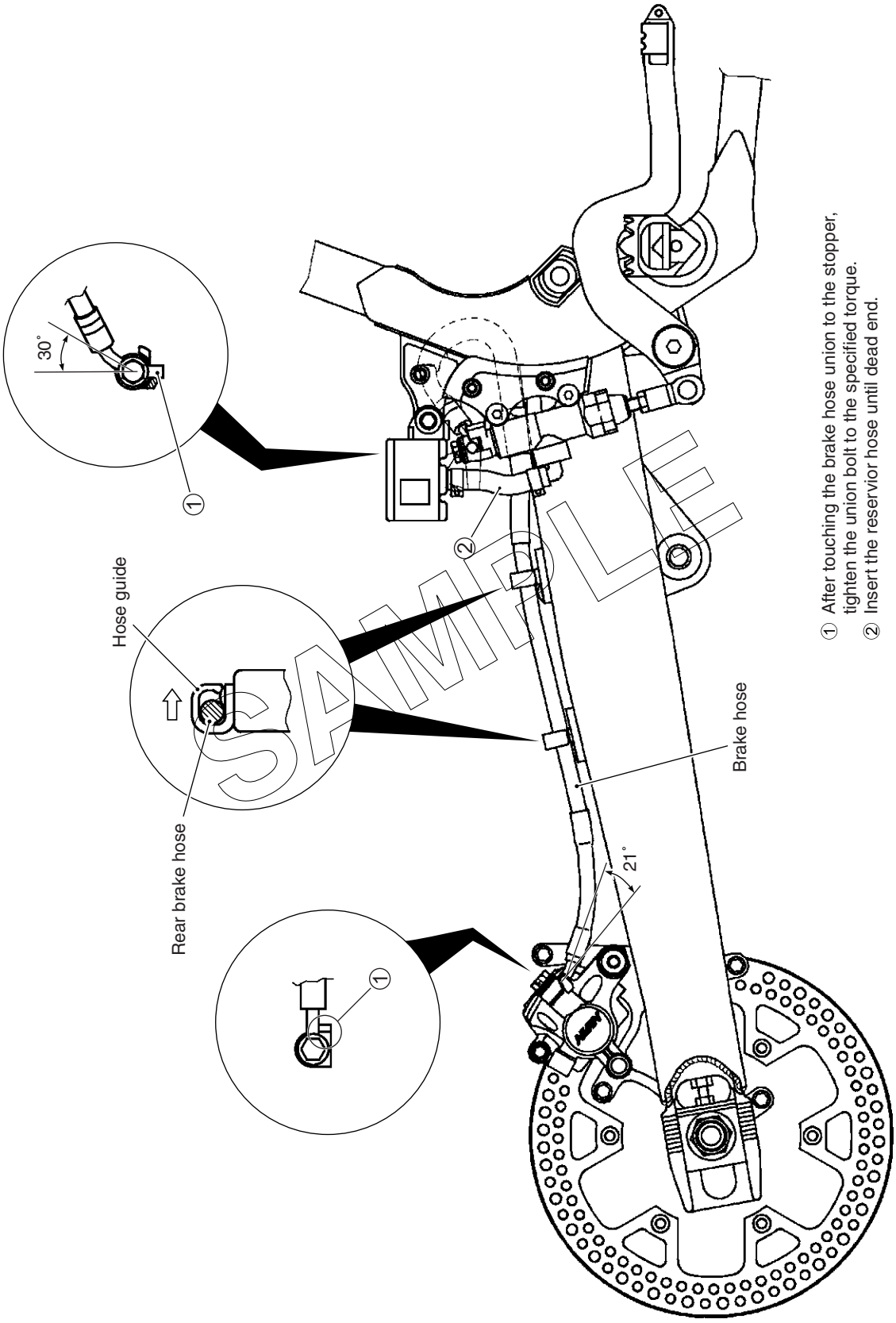
FRONT BRAKE HOSE ROUTING



① Set the brake hose end between the hose stopper then tighen the brake hose union bolt to the specified torque.
② Set the brake hose in front of the throttle cables.
③ Set the brake hose outside of the front fork.
④ Set the brake hose in front of the clutch cable.
⑤ Clump the upper difference portion in brake hose diameter.
⑥ Set the brake hose guide outside of the turn signal bracket.

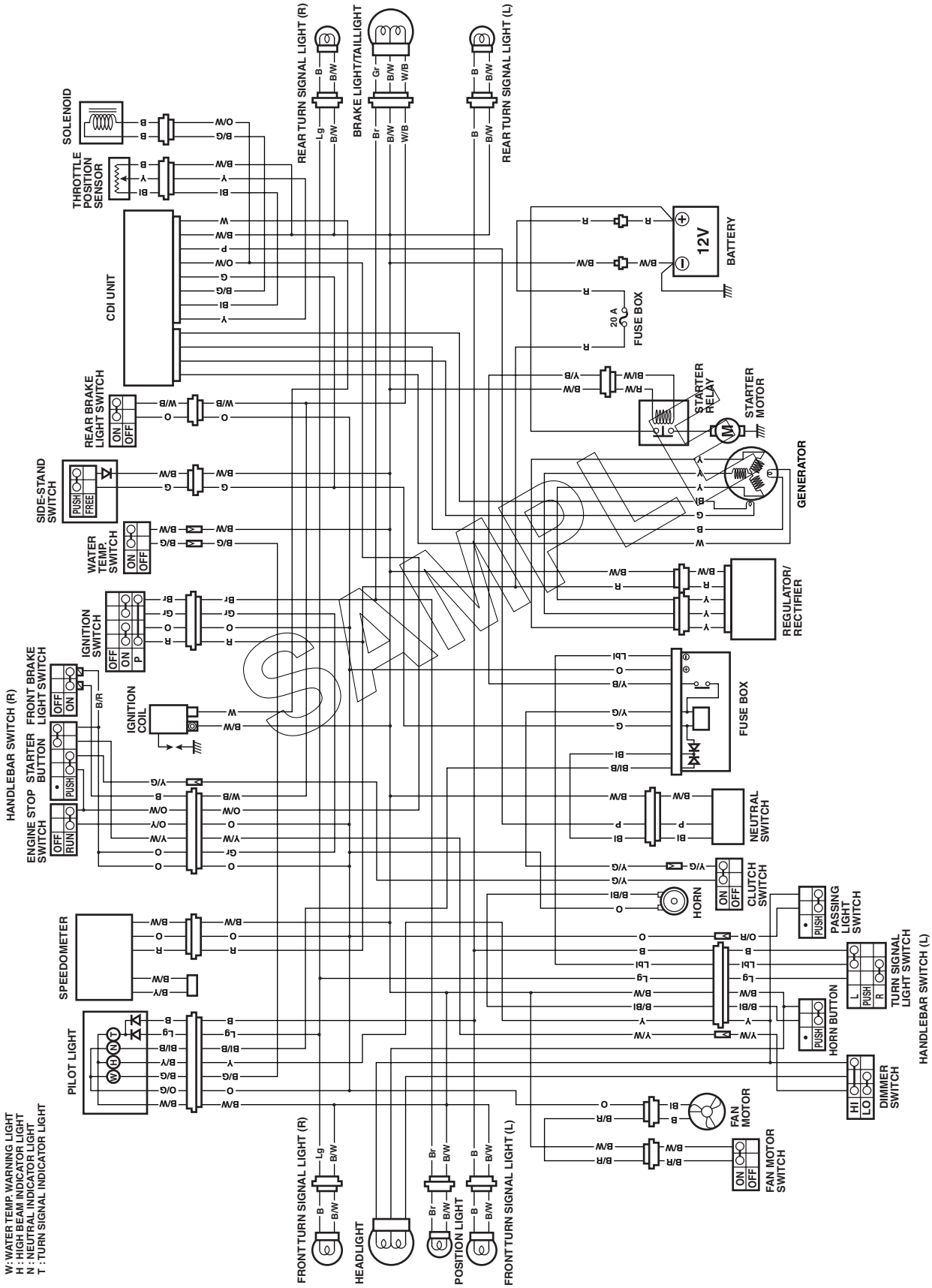
SAMPLE

REAR BRAKE HOSE ROUTING

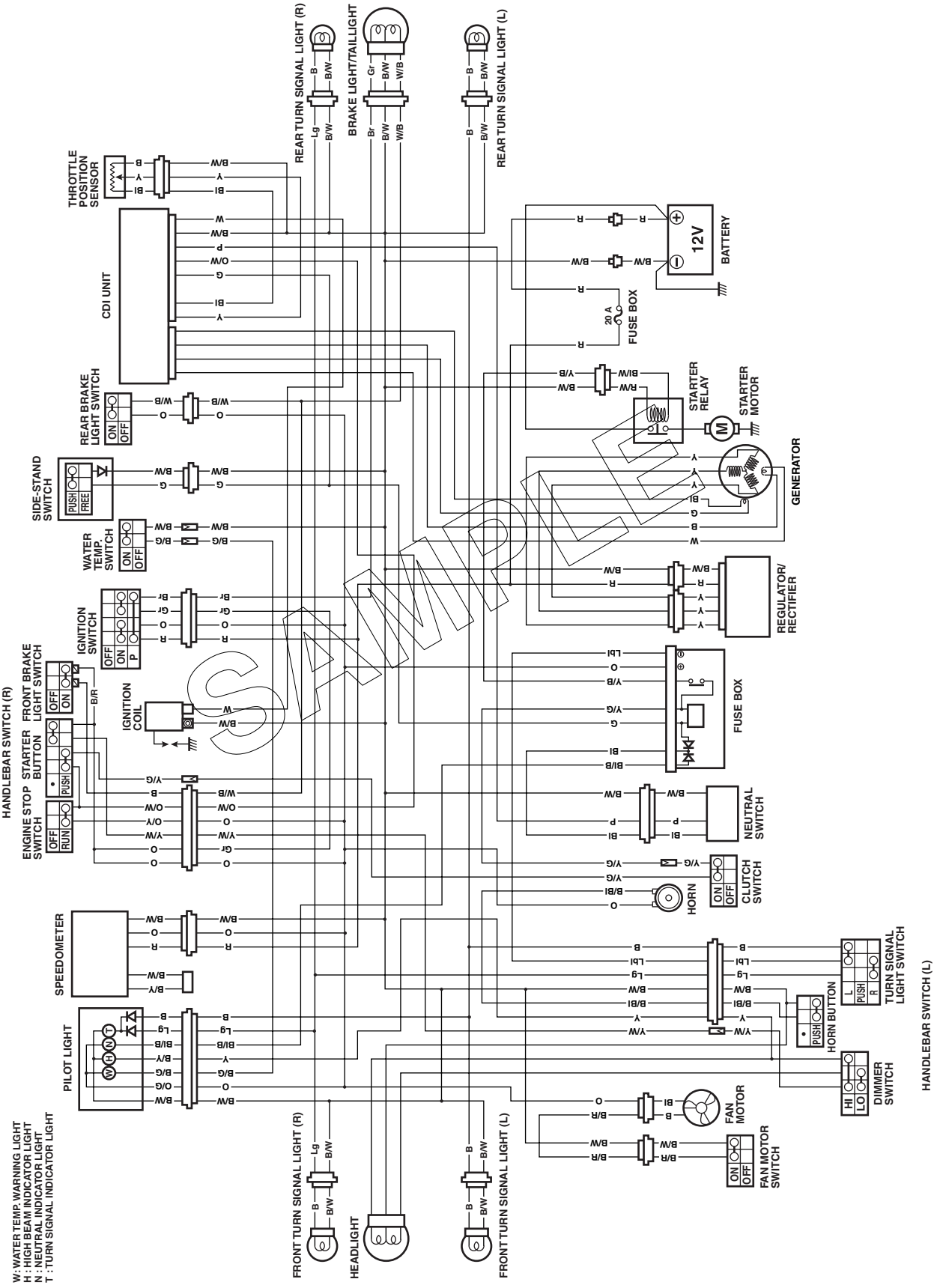

30°
①
②
Hose guide
Rear brake hose
Brake hose
21°
① After touching the brake hose union to the stopper, tighten the union bolt to the specified torque.
② Insert the reservior hose until dead end.

SAMPLE

WIRING DIAGRAM
E-02, 19



E-03, 28, 33


REAR TURN SIGNAL LIGHT (R)
BRAKE LIGHT/TAILLIGHT
REAR TURN SIGNAL LIGHT (L)
THROTTLE POSITION SENSOR
CDI UNIT
BATTERY
12V
FUSE BOX
20 A
REAR BRAKE LIGHT SWITCH
STARTER RELAY
STARTER MOTOR
SIDE-STAND SWITCH
GENERATOR
WATER TEMP. SWITCH
REGULATOR/ RECTIFIER
IGNITION SWITCH
FRONT BRAKE LIGHT SWITCH
HANDLEBAR SWITCH (R)
IGNITION COIL
FUSE BOX
STARTER BUTTON
ENGINE STOP SWITCH
NEUTRAL SWITCH
CLUTCH SWITCH
HORN
SPEEDOMETER
TURN SIGNAL LIGHT SWITCH
HORN BUTTON
PILOT LIGHT
DIMMER SWITCH
HANDLEBAR SWITCH (L)
FAN MOTOR
FAN MOTOR SWITCH
FRONT TURN SIGNAL LIGHT (R)
HEADLIGHT
FRONT TURN SIGNAL LIGHT (L)
W : WATER TEMP. WARNING LIGHT
H : HIGH BEAM INDICATOR LIGHT
N : NEUTRAL INDICATOR LIGHT
T : TURN SIGNAL INDICATOR LIGHT

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SAMPLE

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